THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte KARL M. GUTTAG
and CHRISTOPHER J. READ

_____

Appeal No. 96-3302
Application 08/160,119[1]

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ON BRIEF

_____

Before HAIRSTON, JERRY SMITH, and GROSS, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134

[1] Application for patent filed November 30, 1993.

from the examiner's rejection of claims 1-35, which constitute all the claims in the application. An amendment after final rejection was filed on April 5, 1995 and was entered by the examiner.

The disclosed invention pertains to a method and apparatus for summing plural sections of a single data word. More specifically, the invention repetitively performs steps of masking, rotating and summing on larger and larger sections of the single data word.

Representative claim 1 is reproduced as follows:

1. A method for forming a sum of data in 2^N equal sections of a single data word comprising the steps of for each M from 1 to N:

forming an Mth mask having bits of a first digital state filling M odd alternate sections and bits of a second digital state filling M even alternate sections, said second digital state being opposite to said first digital state;

masking a prior sum data word by a first mask thereby forming a prior sum masked data word, the prior sum data word for M=1 being the single data word;

rotating the prior sum data word by M sections;

masking the rotated prior sum data word by the Mth mask thereby forming a rotated prior sum masked data word;

summing the prior sum masked data word and the rotated prior sum masked data word thereby forming a sum data word, a

last sum data word being the sum of data in 2^N equal sections of the single data word.

The examiner relies on the following references:

Harmon, Jr. et al. (Harmon)	4,467,444	Aug. 21, 1984
Vassiliadis et al. (Vassiliadis)	5,051,940	Sep. 24, 1991
Balmer	5,197,140 (filed Nov. 17, 1989)	Mar. 23, 1993

Claims 1-35 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Harmon alone with respect to claims 1, 2, 4-6, 8 and 9, adds Balmer with respect to claims 10-35, and additionally adds Vassiliadis with respect to claims 3 and 7.

Rather than repeat the arguments of appellants or the examiner, we make reference to the brief[2] and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on

[2] The appeal brief filed on December 26, 1995 appears to be a duplicate of the brief filed on July 10, 1995. Therefore, we refer to either one of these briefs as simply the brief.

appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 1-35. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been

led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

With respect to independent claim 1, the examiner asserts that Harmon teaches all the recited steps except for the summing step. The examiner concludes that the summing step would have been obvious to the artisan because Harmon teaches a comparing step which includes subtraction which is the addition of a negative number [answer, page 2].

Appellants make several arguments in which they point to several recitations of claim 1 which they assert are not taught or suggested by Harmon [brief, pages 4-8]. Since we essentially agree with all of appellants' arguments, we will limit our discussion to only one of the recitations of claim 1 which is not taught or suggested by Harmon.

The preamble of claim 1 ends with the phrase "comprising the steps of for each M from 1 to N:" [emphasis added]. Five steps are then recited which repetitively form sums of data by masking and rotating data as a function of the value of M. Thus, the steps of claim 1 not only must be performed repetitively, but the steps within each repetition change as the value of M varies from 1 to N. The examiner's only consideration of this feature of the invention is to state that "[b]ecause repetition is well-known in the art (as admitted by Applicant), the prior art renders obvious the fact that, with each given iteration, the masks and rotation amounts can change. Repetitions of this kind are particularly common in arithmetic instructions (i.e. summations, subtractions)" [answer, page 13, underlining added].

The examiner's position is apparently that the Harmon

device could be made to perform the steps of claim 1 and to repeat them as claimed even though there is no specific teaching in Harmon to do so. The mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). There is no suggestion in Harmon that the specific steps of claim 1 should be performed repetitively and altered with each repetition as claimed. The examiner's suggestion that Harmon could perform the claimed invention does not establish a prima facie case of obviousness within the meaning of 35 U.S.C. § 103. Therefore, we do not sustain the obviousness rejection of independent claim 1 or of claims 2-4 which depend therefrom.

Independent claim 5 is similar to claim 1. The preamble of claim 5 ends with the phrase "comprising the steps of repeatedly:" [emphasis added]. Five steps are then recited which repetitively form sums of data by masking and rotating data as a function of the size of a "portion." A sixth step

doubles the size of the portion for each succeeding repetition. Thus, the steps of claim 5 not only must be performed repetitively, but the steps within each repetition change as the size of the portion is doubled in successive repetitions. The examiner's only consideration of this feature of the invention is to state that "Harmon teaches that the size of the mask sections can be doubled" [answer, page 3, underlining added] and, therefore, suggests the claimed invention.

The examiner's position with respect to claim 5 is that the Harmon device could be made to perform the steps of claim
5 and to repeat them as claimed even though there is no specific teaching in Harmon to do so. For reasons which we discussed above with respect to claim 1, the examiner's position is not sufficient to establish a prima facie case of obviousness. Therefore, we do not sustain the rejection of independent claim
5 or of claims 6-8 which depend therefrom.

Independent claim 9 does not refer to repetition, but instead, recites the steps of forming, masking, rotating,

masking and summing twice each. It is noted that the steps are recited differently based on whether they correspond to the first recitation or the second recitation. The examiner asserts that the individual steps are disclosed by Harmon and that it "is readily apparent that the steps ... can be repeated" [answer, page 3]. Appellants' arguments and the examiner's response with respect to this claimed repetition feature have been discussed above. Although Harmon may be capable of performing the method recited in claim 9 with appropriate instruction, there is no teaching or suggestion to implement the method as specifically recited in claim 9. Therefore, we do not sustain the rejection of independent claim 9 or of claim 10 which depends therefrom.

Independent claim 11 is directed to an apparatus and the operations performed by the apparatus in response to repeated receipt of a single instruction. The examiner notes the similarities between the structure of Harmon and the structure of claim 11, and the examiner determines that it would have been obvious to the artisan to carry out the operations recited in claim 11 [answer, pages 4-5]. Appellants argue that Harmon does not suggest summing plural

sections of a single data word nor performing the recited operations in response to a single instruction [brief, pages 18-19]. The examiner responds that the rotate and compare instruction of Harmon is a single instruction as recited in claim 11 [answer, page 15].

We agree with appellants that the rotate and compare instruction of Harmon cannot implement the operations recited in claim 11. The examiner basically looks at a comparison as a subtraction which is a negative addition. Thus, the examiner views the rotate and compare instruction as a rotate and sum instruction. The examiner's position fails because the comparison operation of Harmon is a logical comparison rather than an arithmetic one. Thus, Harmon determines whether a difference exists, but does not determine the magnitude of the difference. Accordingly, there is no suggestion to perform the addition of data in plural sections of a single data word as recited in claim 11. Therefore, we do not sustain the rejection of independent claim 11 or of claim 12 which depends therefrom.

Independent claim 13 is directed to an apparatus and the operations performed by the apparatus in response to two

instructions. The operations include masking and rotating which are different for each of the two instructions. Appellants and the examiner rely on arguments considered above with respect to other claims. For reasons which we have discussed above, we do not sustain the rejection of independent claim 13 or of claims 14-16 which depend therefrom.

The final independent claim 17 has all the recitations of claim 13 plus some additional recitations. Since we have determined that the applied prior art does not teach or suggest the invention of claim 13, it also does not teach or suggest the invention of claim 17. Therefore, we do not sustain the rejection of independent claim 17 or of claims 18-35 which depend therefrom.

Although we have limited our attention to the inadequacies of the rejection of the independent claims, we note for the record that we generally agree with all of appellants' arguments with respect to the separate patentability of the dependent claims argued.

In summary, we have not sustained any of the examiner's rejections of the claims under 35 U.S.C. § 103. Accordingly, the decision of the examiner rejecting claim s 1-35 is reversed.

REVERSED

Kenneth W. Hairston Administrative Patent Judge	)
Jerry Smith Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
Anita Pellman Gross Administrative Patent Judge	)

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